

HAFFMANS IN-LINE O₂ MEASUREMENT

KHS GMBH

CASE STUDY



KEY FACTS

Application

Control of O₂ content in soft drink blending

System manufacturer

KHS GmbH, Germany

Measurement devices used

In-line O₂ Gehaltemeter, type OGM

Enduring partnership

As a globally operating manufacturer of filling and packaging systems for the beverage, food and non-food industries, KHS GmbH is a major player in the marketplace.

KHS and Pentair Haffmans have a long standing partnership in the field of measurement technology. In addition to the OGM In-line O₂ Gehaltemeter, KHS also uses the Haffmans Bottle Monitor, Keg Monitor and Redpost System for tunnel pasteurizers.

MODERN OXYGEN MANAGEMENT IN SOFT DRINK BLENDING

To control the oxygen (O₂) content in carbonated soft drinks, Germany-based KHS GmbH uses Pentair Haffmans' In-line equipment. As part of a major project lasting into 2015, 38 In-line O₂ Gehaltemeters, type OGM will be delivered to the international filling and packaging system manufacturer.

The O₂ measuring instruments will be integrated into 19 fully automatic, multi-component mixing systems, type Innopro Paramix C that KHS is building for a leading soft drink producer in the Middle East. Two OGMs will be installed in each mixing unit to monitor the O₂ content after the water de-aeration system and in the end product.

"We often use Haffmans proven measuring technology," said Alfons Abels-Rümping, from product management at KHS's Competence Center of Process Technology. "We have been able to convince the customer to adopt this specific measuring technology."

A wide range of soft drinks as well as mineral water will be blended with the Innopro units. Because the available raw water can contain up to 10 mg/l O₂, vacuum degassing in the unit reduces it to a value below 0.3 mg/l. Adherence to this specification is verified by the OGM installed after the water de-aeration system. The second OGM monitors the O₂ specifications in the end product by, for example, detecting O₂ that could enter the product in contaminated carbon dioxide.

This ensures maximum product safety, especially during the production of products that are prone to oxidation.

Optical O₂ measurement

In optical O₂ measurement, a sensor determines the O₂ content based on the quenching of luminescence. Pentair Haffmans introduced this innovative measuring technology to the market in 2004, and today it is the reference method for determining O₂ levels in the brewing and soft drink industries.

In this measurement process the fluorescence changes depending on O₂ partial pressure. The O₂ content is calculated based on the O₂ partial pressure and the temperature measured. The measurement cannot be influenced from outside and therefore is not dependent on the operator or the product. It can also be used in gaseous phases as well as in colored or cloudy products. This is an important factor, especially when various types of beverages are being produced. In addition, optical O₂ measurement only requires minor maintenance and calibration. It provides excellent measurement stability and very fast response times, which reduces operating costs and product loss, and increases productivity.

HAFFMANS BV

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